This is a digital copy of a book that was preserved for generations on library shelves before it was carefully scanned by Google as part of a project to make the world's books discoverable online.

It has survived long enough for the copyright to expire and the book to enter the public domain. A public domain book is one that was never subject to copyright or whose legal copyright term has expired. Whether a book is in the public domain may vary country to country. Public domain books are our gateways to the past, representing a wealth of history, culture and knowledge that's often difficult to discover.

Marks, notations and other marginalia present in the original volume will appear in this file - a reminder of this book's long journey from the publisher to a library and finally to you.

Usage guidelines

Google is proud to partner with libraries to digitize public domain materials and make them widely accessible. Public domain books belong to the public and we are merely their custodians. Nevertheless, this work is expensive, so in order to keep providing this resource, we have taken steps to prevent abuse by commercial parties, including placing technical restrictions on automated querying.

We also ask that you:

+ *Make non-commercial use of the files* We designed Google Book Search for use by individuals, and we request that you use these files for personal, non-commercial purposes.

+ *Refrain from automated querying* Do not send automated queries of any sort to Google's system: If you are conducting research on machine translation, optical character recognition or other areas where access to a large amount of text is helpful, please contact us. We encourage the use of public domain materials for these purposes and may be able to help.

+ *Maintain attribution* The Google "watermark" you see on each file is essential for informing people about this project and helping them find additional materials through Google Book Search. Please do not remove it.

+ *Keep it legal* Whatever your use, remember that you are responsible for ensuring that what you are doing is legal. Do not assume that just because we believe a book is in the public domain for users in the United States, that the work is also in the public domain for users in other countries. Whether a book is still in copyright varies from country to country, and we can't offer guidance on whether any specific use of any specific book is allowed. Please do not assume that a book's appearance in Google Book Search means it can be used in any manner anywhere in the world. Copyright infringement liability can be quite severe.

About Google Book Search

Google's mission is to organize the world's information and to make it universally accessible and useful. Google Book Search helps readers discover the world's books while helping authors and publishers reach new audiences. You can search through the full text of this book on the web at `http://books.google.com/`

9.25
S-SSA-M

HARVARD UNIVERSITY.

LIBRARY

OF THE

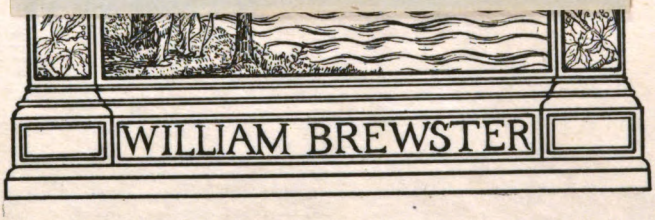
MUSEUM OF COMPARATIVE ZOÖLOGY

10,759

BEQUEST OF

WILLIAM BREWSTER

February 17, 1920.



Digitized by Google

Digitized by Google

Digitized by Google

Digitized by Google

Digitized by Google

TRANSACTIONS

OF THE

MERIDEN SCIENTIFIC ASSOCIATION

MERIDEN, CONN.

VOL. II.

1885–1886.

Digitized by Google

Digitized by Google

PROCEEDINGS AND TRANSACTIONS

OF THE

SCIENTIFIC ASSOCIATION,

MERIDEN, CONN.

1885–1886.

VOL. II.

MERIDEN, CONN.
E. A. HORTON & CO., PRINTERS.
1887.
5

Digitized by Google

Digitized by Google

Bind in 3 vols
Covers on, edges uncut.
Canvas with red band
for lettering.
Lettering

Transactions Meriden
Scientific Ass.
Vol II 1885-1886
" III 1887-1888
" IV 1889-1890

The lettering can turn
up the back if
necessary. Use Caxton
type

	Page.
. .	5
. .	7
. .	9
. .	10
. .	13
. .	19
. .	23
. .	29
. .	30
Kendrick,	54
. .	58

Digitized by Google

Digitized by Google

CONTENTS.

	Page.
List of Officers and Directors of Sections,	5
Report of Secretary,	7
Report of Treasurer,	9
Report of Curator and Librarian,	10
Proceedings of 1885 and 1886,	13
The Catopterus gracilis, by Chas. H. S. Davis, M. D.,	19
The Hanging Hills, by J. H. Chapin, Ph. D.,	23
An Interesting Find, by J. H. Chapin, Ph. D.,	29
A List of the Birds of Meriden, by Franklin Platt,	30
Additional Plants found growing in Meriden, by Mrs. E. B. Kendrick,	54
West Peak, and What It Saith, by Rev. J. T. Pettee,	58

Digitized by Google

Digitized by Google

OFFICERS.

REV. J. H. CHAPIN, Ph. D., ... President.
REV. J. T. PETTEE, A. M., ... Vice-President.
CHAS. H. S. DAVIS, M. D., ... Secretary.
ALBERT B. MATHER, A. M., ... Treasurer.
ROBERT BOWMAN, ... Curator and Librarian.
MRS. E. B. KENDRICK, ... Collector.

DIRECTORS OF SECTIONS.

GEOLOGY AND PALÆONTOLOGY, ... Rev. J. H. Chapin.
ASTRONOMY, ... Rev. John T. Pettee.
ARCHÆOLOGY AND ETHNOLOGY, ... Dr. Chas. H. S. Davis.
ANTHROPOLOGY, ... Melville A. Stone, A. M.
BIOLOGY, ... Miss Wegia H. Hall.
MICROSCOPY, ... Dr. G. H. Wilson.
BOTANY, ... Mrs. E. B. Kendrick.
ZOOLOGY, ... Albert B. Mather, A. M.
ENGINEERING, ... F. E. Sands.
GEOGRAPHY, ... Mrs. Clarence E. Ellsbree.
CHEMISTRY . . . . . Chas. E. Skidgell.
MECHANICS, ... Henry S. Pratt, A. M.
TECHNOLOGY, ... Rev. J. V. Garton.
ELECTRICAL SCIENCE, ... Waldo L. Upson.
ENTOMOLOGY, ... Wm. H. Doyle.
ORNITHOLOGY, ... Franklin Platt.
ICHTHYOLOGY, ... Edwin B. Everitt.
CONCHOLOGY, ... Miss M. Ella Daniels.
NECROLOGIST, ... Geo. W. Smith.

Digitized by Google

PUBLISHING COMMITTEE.

CHAS. H. S. DAVIS., M. D. FRANKLIN PLATT.

MRS. E. B. KENDRICK.

Digitized by Google

Report of Secretary.

At the beginning of the sixth year of the Association we have one hundred and thirty members.

During the past year eighteen gentlemen and ten ladies were elected members of the Association.

The Directors of the various sections have prepared with a great deal of care, and presented to the Association every alternate month, a resumé of scientific progress made during the previous two months.

At each alternate month papers have been read by members of the Association and others, to large and appreciative andiences.

The following papers were read before the Association in 1885:

FEBRUARY.

The Treatment of Horn Silver Ore,	Rev. A. H. Hall.
Crystalization,	Prof. Henry S. Pratt.

MAY.

Explosives,	Miss Kate R. Kelsey.
Bacteria *vs.* Material Immortality,	Dr. G. H. Wilson.

SEPTEMBER.

Our Schools,	Andrew J. Coe.
The Great Tombs and Smoking Mountains of Mexico,	Rev. J. H. Chapin.

NOVEMBER.

Review of Pressensé's "History of Origins,"	Rev. W. F. Markwick.
Review of Drummond's "Natural Law of the Spiritual World,"	Rev. A. J. Aubrey.
Review of the Seventh Chapter of the "Natural Law of the Spiritual World,"	Mrs. E. B. Kendrick.

Digitized by Google

During 1886 the following papers were read:

JANUARY.

The Beginnings of Life, . REV. DR. STIDHAM, of New Britain.
Review of "The New Theology," . REV. J. H. BRECKINRIDGE.

MARCH.

Electric Motors, . . . PROF. HENRY S. PRATT.
Horology, ... REV. J. G. GRISWOLD.

MAY.

Beginnings of Life, with Stereopticon illustrations, . . REV. DR. STIDHAM, of New Britain.

OCTOBER.

A Plea for the Birds, . . . FRANKLIN PLATT.

DECEMBER.

The Niagara Gorge, ... REV. J. H. CHAPIN.
India, ... MRS. G. H. MCGREW.

During the summer an excursion was made to the Portland Quarries.

The lecture course for 1886–7 was very successful and gave great satisfaction. It comprised lectures by

REV. E. C. BOLLES, Ph. D., on "First Letters of the Alphabet of Life."
DR. ALFRED RUSSELL WALLACE, LL. D., F. R. S., on "The Darwinian Theory."
PROF. ALEXANDER WINCHELL, LL. D., on "Life History of the World."
REV. J. H. CHAPIN, Ph. D., on "An Evening in the Land of the Montezumas."
And a concert by the YOUNG APOLLO CLUB.

The Association has a large collection of geological and other specimens which are not unpacked, for want of sufficient room, and it is to be hoped that before the summer vacation we shall have rooms of our own, where our library and collections can be made more available.

CHAS. H. S. DAVIS,

Secretary.

Digitized by Google

Report of Treasurer.

MERIDEN SCIENTIFIC ASSOCIATION.

1886.	Dr.		
To cash paid Mr. Garton,		$3.00	
" " Dr. Chapin,		8.65	
" " Robt. Bowman,		5.33	
" " Dr. Davis,		3.00	
" " Mrs. Kendrick,		10.40	
Balance,		157.52	
			$187.90

1886.	Cr.		
By Balance from 1885,		$81.90	
" Memberships,		2.00	
" Mrs. Kendrick, Collector,		104.00	
			$187.90

A. B. MATHER,

Treasurer.

January 10, 1887.

Digitized by Google

Report of Curator and Librarian.

I have to report the following additions to the library and cabinet of the Association during the years 1885 and 1886:

Geology of the Comstock Lode and the Washoe District. Becker.

United States Geological Survey. Powell. Fifth Annual Report, 1883-1884.

Reports of Observations of the Total Eclipse of the Sun, August 7, 1869. J. H. C. Coffin.

Bureau of Ethnology. Annual Report. J. W. Powell. 1879-80-81-82.

Powdered Anthracite and Gas Fuel. Scranton Board of Trade, 1886.

Smithsonian Report, 1884.

American Ephemeris and Nautical Almanac, 1886-87-88-89.

Astronomical Papers of the American Ephemeris.

Transactions of the Academy of Science of St. Louis. Vol. 4; No. 3.

Bulletin of the Torrey Botanical Club, 1886.

Proceedings and Transactions of the Natural History Society of Glasgow. Vol. 1; Parts 1-2.

Transactions of the Wyoming Historical and Geological Society. Vol. 2; Part 2.

Journal of the Cincinnati Society of Natural History, 1885.

Bulletin of the Minnesota Academy of Natural Sciences, 1882-83.

Transactions of the Vassar Brothers' Institute, Scientific section. Vol. 2.

Monographs of the United States Geological Survey. Vols. 2 to 12, with maps to accompany Vols. 2 and 3.

Digitized by Google

Bulletin of the United States Geological Survey. Vols. 1, 2, 3.

Sixteen maps accompanying Report of Forest Trees of North America. Prof. C. S. Sargent.

Dinamica—Quimica. C. F. de Landero and Raoul Prieto. Guadalajara, 1886.

Bulletin of Brookville (Ind.) Society of Natural History. No. 2.

Bulletin of the American Museum of Natural History, New York. No. 7.

ADDITIONS TO CABINET.

Fossil Plants, one specimen.

Geodes, three specimens.

Dendrites, four specimens (one very large).

Calcareous Tufa, two specimens.

Graphite, two specimens.

Epidote, two specimens.

Barytes (Coxcomb), three specimens.

Mica (Muscovite), one specimen.

Mica (Biotite), one specimen.

Moonstone, one specimen.

Petrified Wood, one specimen.

Buhrstone, two specimens.

Native Copper, four specimens.

Pyrites, two specimens.

Limonite, three specimens.

Franklinite, two specimens.

Black Jack, two specimens.

Gold-bearing Quartz, two specimens.

Specimens of Iron, Copper, Manganese, Zinc, Pyrolusite, Psilomelane.

Hematite, large and very fine specimens.

The above minerals are from Northern Michigan.

Petrified Wood from Apache County, Arizona.

Feldspar and Rose Quartz from Portland, Conn.

Metamorphosed Sandstone and Conglomerate, from contact line between Trap and Sandstone, East Rock, New Haven, Conn.

Cedar Wood perforated by borers, two specimens.

The following collection of minerals are from the Black Hills, Dakota, in the vicinity of Deadwood, and were presented to the Association by Wm. H. Pratt, Esq.

Copper Ore from Eagle mine, one specimen.

Copper Ore from St. Joseph mine, one specimen.

Digitized by Google

Silver Ore from Far West mine, three specimens.
Silver Ore from Seabury Calkins mine, two specimens.
Silver Ore from Gem Hill mine, five specimens.
Silver Ore from Elko mine, three specimens.
Silver Ore from La Plata mine, one specimen.
Gold Ore from Homestake mine, seven specimens.
Gold Ore from Deadwood Terror mine, one specimen.
Gold Ore from De Smelt mine, two specimens.
Gold Ore from Caledonia mine, one specimen.
Lead Carbonate from Medora mine, two specimens.
Iron Ore from Medora mine, two specimens.
Bituminous Coal from Haycreek mine, one specimen.
Galena from Hannibal mine, one specimen.
Tin Ore from Nigger Hill mine, one specimen.
Graphite, one specimen.
Gypsum from Black Hills, one specimen.
Marble from Gilman mine, one specimen.
Salt from Iron Springs, fifty miles west of Deadwood.

ROBERT BOWMAN,

Curator and Librarian.

January, 1887.

Digitized by Google

PROCEEDINGS.

1885.

JANUARY 12, 1885.

Regular meeting of the Association, January 12, 1885. Rev. C. H. Everest, Eli C. Birdsey, Mr. and Mrs. H. B. Allen, Jas. F. Allen, Miss Caro G. Allen, Mr. and Mrs. L. L. Sawyer, Miss Sarah N. Benedict and Miss Hettie Lewis were elected members of the Association.

Miss Emma L. Rice and Miss Hattie A. Linsley were proposed for membership.

Voted, that W. H. Quested be appointed Collector.

The following officers were appointed for the ensuing year:

President—REV. J. H. CHAPIN.

Vice-President—REV. J. T. PETTEE.

Secretary—CHAS. H. S. DAVIS, M. D.

Treasurer—ALBERT B. MATHER.

Curator and Librarian—ROBERT BOWMAN.

Voted, That the Rev. J. H. Breckinridge be appointed Necrologist.

Adjourned to meet Monday evening, February 9, 1885.

FEBRUARY 9, 1885.

Regular meeting of the Association, February 9, 1885. Miss Emma L. Rice and Miss Hattie A. Linsley were elected members of the Association.

Messrs. Seidensticker and Pratt and Mrs. Kendrick were appointed committee on programme for the April meeting.

Voted, That when any director of a section is absent, upon the call of that section for the monthly report, any member of the Association may contribute any fact or incident pertaining to that section, and when any director has completed his monthly report,

Digitized by Google

any member present may supplement it by any fact or incident within his knowledge.

Adjourned to meet Monday evening, March 9, 1885.

MARCH 9, 1885.

Regular meeting of the Association, March 9, 1885. E. C. Wheatley and Miss M. H. Nash were proposed for membership.

Voted, That the number of copies of the TRANSACTIONS to be printed be left with the committee.

Adjourned to meet Monday evening, April 13, 1885.

APRIL 13, 1885.

On account of the Hospital Fund concert, the April meeting of the Association was postponed until May 11, 1885.

MAY 11, 1885.

Regular meeting of the Association, May 11, 1885.

E. C. Wheatley and Miss M. H. Nash were elected members of the Association.

Messrs. Hirons and Beebe were appointed committee on programme for the September meeting.

Voted, That the Association have an excursion some Saturday before the end of the school year, and Messrs. Bowman, Seidensticker and Pratt were appointed a committee to select the place and make the necessary arrangements.

Adjourned, to meet Monday evening, June 8, 1885.

JUNE 8, 1885.

Regular meeting of the Association, June 8, 1885. Newell Wightman and D. S. Carpenter, of West Rutland, Vt., were proposed for membership.

Voted, That the officers of the Association be appointed a committee to consider what can be done to extend the usefulness of the Association. Adjourned to meet Monday evening, September 14, 1885.

SEPTEMBER 14, 1885.

Regular meeting of the Association, September 14, 1885. D. S. Carpenter, of West Rutland, Vt., and Newell Wightman, of South Meriden, were elected members of the Association.

Messrs. Davis, Mather and Pratt were appointed a committee to purchase books for the Association.

Digitized by Google

Messrs. Davis and Barker and Miss Daniels were appointed a committee on programme for the November meeting of the Association.

Adjourned to meet Monday evening, October 12, 1885.

OCTOBER 12, 1885.

Regular meeting of the Association, October 12, 1885. Thomas L. Reilly, William M. Stoddard, George L. Cooper, Mrs. Ella Hood Cooper, Rev. C. A. Knickerbocker, Mrs. George Austin Fay, Mrs. Mary E. Pratt, Rev. Isaac R. Wheelock, Miss Alice Derby and Miss Addie Upson were proposed for membership.

Voted, That Mrs. Kendrick purchase sufficient paper for mounting the Herbarium.

Adjourned to meet Monday evening, November 10, 1885.

NOVEMBER 10, 1885.

Regular meeting of the Association, November 10, 1885. T. S. Reilly, W. L. Stoddard, Mr. and Mrs. G. L. Cooper, Rev. C. A. Knickerbocker, Rev. I. R. Wheelock, Mrs. G. A. Fay, Mrs. Mary E. Pratt, Miss Alice Derby and Miss Addie Upson were elected members of the Association.

Rev. Mr. Markwick was proposed for membership.

Messrs. Garton and Stone and Mrs. Kendrick were appointed a committee on programme for the January meeting.

Adjourned to meet Monday evening, December 14, 1885.

DECEMBER 14, 1885.

Regular meeting of the Association, December 14, 1885. Rev. Mr. Markwick was elected a member of the Association. Adjourned to meet Monday evening, January 11. 1886.

1886.

JANUARY 11, 1886.

Regular meeting of the Association, January 11, 1886. Messrs. Mather, Robinson and Upson were appointed a committee on programme for the March meeting.

Miss Wegia Hope Hall was proposed for membership.

Digitized by Google

Voted, That the bills presented by Rev. Dr. Chapin to the amount of $13.30 be paid.

Rev. Dr. Stidham was proposed for honorary membership.

Mrs. E. B. Kendrick was appointed Collector for the ensuing year.

The following officers were appointed for the ensuing year:

President—Rev. J. H. Chapin.
Vice-President—Rev. J. T. Pettee.
Secretary—Dr. C. H. S. Davis.
Treasurer—A. B. Mather.
Curator and Librarian—Robert Bowman.

Voted, That the directorships remain as the preceding year.

Adjourned to meet Monday evening, February 8, 1886.

February 8, 1886.

Regular meeting of the Association, February 8, 1886.

Miss Wegia H. Hall was elected an active member of the Asso-tion.

Rev. Dr. Stidham was elected an honorary member of the Association. Benjamin C. Kennard and Mrs. Josephine Prevost were proposed for membership.

Voted, That a committee of three be appointed by the President of the Association to wait on Rev. J. T. Pettee and request him to withdraw his resignation.

Messrs. Davis, Mather and Bowman were appointed as the committee.

Adjourned to meet Monday evening, March 8, 1886.

March 8, 1886.

Regular meeting of the Association, March 8, 1886. Benjamin C. Kennard and Mrs. Josephine Prevost were elected to membership.

Dr. Anna Jackson Ferris, H. O. Winslow, Mrs. Caroline Winslow, Franklin Platt, Mrs. Sarah R. Platt, Mrs. Clarence E. Ellsbree and Rev. J. G. Griswold were proposed for membership.

Messrs. Garton and Stone and Mrs. Kendrick were appointed a committee on programme for the May meeting.

Voted, that a committee be appointed by the President to consider the advisability of establishing a department of social science, to report at the April meeting of the Association.

Digitized by Google

Messrs. Hall, Davis and Pratt were appointed as the committee.

Adjourned to meet Monday evening, April 12, 1886.

APRIL 12, 1886.

Regular meeting of the Association April 12, 1886. Dr. Anna Jackson Ferris, H. O. Winslow, Mrs. Caroline Winslow, Franklin Platt, Mrs. Sarah R. Platt, Mrs. Clarence E. Ellsbree and J. G. Griswold were elected to membership.

The committees on programme and on social science were continued to the May meeting of the Association.

Adjourned to meet Monday evening, May 10, 1886.

MAY 10, 1886.

Regular meeting of the Association, May 10, 1886.

Messrs. Pettee, Davis and Quested were appointed a committee to arrange for an excursion of the Association.

Messrs. Mather, Cooper, Bowman and Pratt and Mrs. Kendrick were appointed a committee to consider the expediency of having a course of lectures the coming winter.

Messrs. Pratt and Stone and Miss Ida Hall were appointed a committee on programme for the September meeting.

Adjourned to meet Monday evening, June 14, 1886.

JUNE 14, 1886.

Regular meeting of the Association, June 14, 1886. David S. Root and Rev. S. Halsted Watkins were proposed for membership.

Report of committee on excursion accepted and the committee directed to arrange for the excursion to Portland.

Voted, that the lecture committee proceed to arrange for a course of lectures and to report at the September meeting.

Voted, That the September meeting be devoted to the reports of the directors of sections.

Voted, That Mr. Franklin Platt be appointed director of the section of Ornithology.

Adjourned to meet Monday evening, September 13, 1886.

SEPTEMBER 13, 1886.

Regular meeting of the Association, September 13, 1886.

Report of committee on programme accepted and committee discharged. Rev. George H. McGrew, S. J. Robie, Mr. and Mrs. Frank Rhind, Mrs. Knickerbocker and Miss F. Ione Garde were proposed for membership.

Adjourned to meet Monday evening, October 11, 1886.

Digitized by Google

OCTOBER 11, 1886.

Regular meeting of the Association, Monday evening, October 11, 1886. Rev. George H. McGrew, S. J. Robie, Mr. and Mrs. Frank Rhind, Mrs. Knickerbocker and Miss F. Ione Garde were elected to membership.

Miss Annie Bishop, Augustus Hirschfeld, David Mossman and Wm. W. Lee were proposed for membership.

Messrs. Platt and Everitt and Miss Moess were appointed committee on programme for the November meeting.

Voted, that the lecture committee confer with Mr. Marvin in regard to selling reserved seats for the lecture course.

Adjourned to meet Monday evening, November 8, 1886.

NOVEMBER 8, 1886.

Regular meeting of the Association, November 8, 1886. Miss Annie Bishop, August Hirschfeld, David Mossman and Wm. W. Lee were elected to membership.

Mr. and Mrs. Nathan S. Baldwin, Frank E. Sands, O. G. Harrison, Charles G. Kendrick and Mrs. Carrie E. Davis were proposed for membership.

Committee on programme reported and the committee continued.

Adjourned to meet Monday evening, December 6, 1886.

DECEMBER 6, 1886.

Regular meeting of the Association, December 6, 1886.

Messrs. C. E. Ellsbree and Stoddard and Mrs. Everitt were appointed committee on programme for the February meeting.

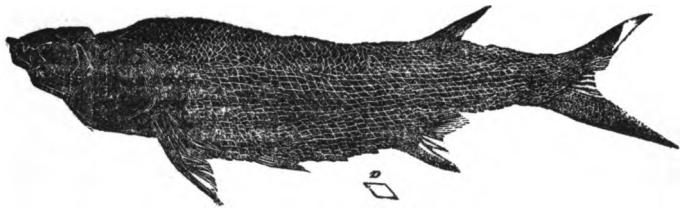
Messrs. Davis and Platt and Mrs. Kendrick were appointed committee on publication.

Adjourned to meet Monday evening, January 10, 1887.

CHAS. H. S. DAVIS,

Secretary.

Digitized by Google



The Catopterus gracilis.

By Chas. H. S. Davis, M. D.

There is an enormous series of subaqueous sediment, originally composed of mud, sand or pebbles, the successive bottoms of a former sea, and in which no trace of organic life has yet been detected.

These non-fossiliferous sedementary beds form, in all countries where they have been examined, the base-rock on which the Cambrian or oldest Silurian strata rest.

Whether they be significative of ocean abysses never reached by the remains of coeval living beings, or whether they truly indicate the period antecedent to the beginning of life on this planet, are questions of the deepest significance, and demanding much farther observation before they can be authoritatively answered.

Palæontologists fail to detect a single bone of any aquatic animal of the vertebrate class in rocks older than the uppermost division of the Silurian system, but fishes are found in all the great rock foundations from the graywacke upward, and, therefore, the history of fossil fishes becomes of great importance.

When we consider how rich a molluscuous fauna, to say nothing of the crustaceans, sea urchins, corals, etc., which have been met with in almost all parts of the world, it seems impossible to account for our not having yet found any accompanying bones of fish, except by supposing they were not yet in being, or that they only occupied a limited area.

Next to the Silurian comes the Old Red-sandstone Devonian formation, which is very rich in fishes, the majority of which be-

---

[The Association is indebted to Messrs. Ivison, Blakeman & Taylor, the publishers of *Dana's Geology*, for the use of the cut of the *Catopterus gracilis*.]

Digitized by Google

longed to the order of *Ganoids* and a few to the *Placoids* of Agassiz; and it is remarkable that the vast majority of the fossil fish of the succeeding formation, from the Carboniferous to the Oolitic, consists, in like manner, of *Ganoids*, a family which, though so rich in genera in the olden times, is of quite exceptional occurrence in the present creation.

These fish belong to races, of which there have been left as their living representatives on the globe, only two genera and about seven species, viz., the *Lepidosteus*, or bony fishes of this country and the *Polypterus* of the Nile and Senegal, although seventeen genera have been found fossil.

The present might appear to be the culminating period in the development of fishes, in respect to the number of ordinal forms or modifications of the class. It represents, however, rather the result of mutation, depending upon the progressive assumption of a more special type.

The cabinet of the Meriden Scientific Association contains some very fine specimens of the fossil fish known as the *Catopterus gracilis*, which were procured by members of the Association at a place called Little Falls, about eight miles east of Meriden and two miles north of Durham Center.

Fossil fish have been found in several places in Connecticut and at Sunderland, Deerfield and West Springfield, Mass.; in fact, with the exception of the teeth and vertebræ of sharks, found in the cretaceous formation of the Alantic coast, the fossil remains of fishes hitherto discovered in the United States have, for the most part, been confined to the New Red-sandstone of the Connecticut river valley.

These fishes are in most cases found in bituminous shale, which, in character, sometimes approaches a micaceous sandstone. The shale generally forms the bank of the river several feet high and the ichthyolites are most abundant in the lower part of the bed which corresponds nearly with low water mark. A thin layer of carbonaceous matter usually marks out the spot where the fish lay, except the head, whose outlines are rendered visible only by irregular ridges and furrows. In some cases, however, satin spar forms a thin layer over the carbonaceous matter, and being of a light grey color, it gives to the specimen an aspect extremely like that of a fish just taken from the water.

The *Catopterus gracilis* was first described by Redfield.*

*Annals of the Lyceum of Natural History, New York, 1837; p. 35.

Digitized by Google

In the arrangement of Agassiz* the *Catopterus gracilis* would be comprehended in the order of *Ganoids* and family *Lepidoides*. Redfield was disposed at first to assign it to the Homocercal division of Agassiz's family *Lepidoides*, but was afterwards disposed to qualify this somewhat, and judged it to occupy a sort of intermediate position between the two divisions, neither being exactly equilobed, like the *Homocerci*, nor yet having the decided heterocercal character which belongs to those genera which Agassiz has placed in that division.

The name *Catopterus* was given to this genus by Redfield, from the situation of the dorsal fin.

At Little Falls, the bituminous shale in which the fishes are found, occurs interstratified with the sandstone, and is exposed to view at the bottom of a ravine twenty or thirty feet in depth, which has been excavated by the action of a small stream. The stratum is nearly horizontal. Some layers of the shale abound, not only in remains of fishes, but also in those of vegetables, apparently endogenous, while others are nearly destitute of both.

The substance of the fish, as well as that of the vegetable, is converted into carbonaceous matter, and it is observed that while the form of the scales and rays is perfectly and beautifully preserved, there are no traces of bones remaining.

According to Agassiz, this is almost universally the case with the individuals of the family *Lepidoides* to which these belong.

The following is a description of the *Catopterus gracilis*:

Body, fusiform, covered with rhomboidal scales, which extend obliquely across it, and parallel with its length. *Scales*, middling size. *Head*, rather small, presenting a finely granulated surface, resembling shagreen. *Back*, but slightly arched. *Pectoral fins*, middling. *Ventral*, small, inserted midway between pectoral and anal. *Anal*, large. *Dorsal*, middling, extended opposite the posterior part of the anal. *Tail*, forked, equilobed. *Scales*, extending a little upon the base of the upper lobe. All of the fins have a se-

* Agassiz divides fishes into four orders, deriving their characters from the scales: 1. The *Placoidians*, or those whose skin is covered irregularly with plates of enamel. 2. The *Ganoidians*, or those having angular scales of horny or bony plates, covered with a thick plate of enamel. 3. The *Ctenoidians*, or those having jagged or pectinated scales. 4. The *Cycloidians*, or those having scales smooth and simple at their margin. Three-fourths of the existing species of fish belong to the two last orders, whose existence has not been ascertained below the chalk. The remaining fourth belongs to the two first orders, and existed alone in all the periods during which the fossiliferous rocks below the chalk were deposited. *Agassis: American Journal of Science, Vol. 30; p. 39.*

Digitized by Google

ries of raylets inserted obliquely upon the first or anterior ray, producing a serrated or denticulate appearance. The succeeding rays have an articulate appearance and are finely subdivided toward their extremities. The following list of the number of rays in each fin may serve to give an idea of their relative size:

Pectoral, large and strong.	10 to 12.
Ventral	about 8.
Dorsal	10 to 12.
Anal	20 to 30.
Caudal	30 to 40.

Digitized by Google

The Hanging Hills.

By J. H. Chapin, Ph. D.

A fresh interest attaches to the Hanging Hills—the trap ridges lying just out of the city limits in Meriden, toward the west—in the discussion now attracting attention in regard to their origin, or rather the mode of their occurrence.

In the Triassic, or Red-sandstone region of the Connecticut valley—extending from the northern limits of Massachusetts to Long Island Sound—are numerous ridges of a dark colored eruptive rock, somewhat indefinitely described as trap, that have sometime in the past history of this region been pushed up through rifts in the red sandstone for which the section is so well-known.

No one passing through Meriden, even on the railroad, can fail to observe them, so prominent and striking a feature are they of the landscape.

And indeed in going from New Haven to Greenfield, Mass., from one to half a dozen of these singular prominences are always in sight.

Though seemingly disposed at irregular intervals, the map shows that they form a continuous series, not unlike a mountain chain, and suggest at once the presence of some of the forces that from time to time have thrown the earth's surface into rugged folds. But a casual examination is sufficient to show that the action here was different from that in ordinary mountain making.

The black rock mass is no part of the original strata laid down in seas or rivers, but an intruder, that found its way hither after the Triassic formation had been deposited, and for which the strata had been rudely disturbed and torn asunder.

The term Triassic is here used, as the reader will understand, to include the Jurassic also, or so much of it as may be represented along the the eastern border of the continent. Perhaps Tria-Jurassic, or as Le Conte puts it, Jura-Triassic, would be more appropriate.

Digitized by Google

The range of trap ridges, extending from Mounts Tom and Holyoke in Massachusetts on the north, has a southerly trend, nearly parallel to the Appalachian chain, till it reaches the Hanging Hills, buttressed and sentineled by West Peak, in Meriden, where it makes an abrupt turn to the east along West Mountain, South Mountain, Cathole aud Mount Lamentation, when it bends southward again through Middlefield, Durham, and so on, and encloses the city of Meriden like the ramparts of a vast amphitheatre. An almost invariable feature of these ridges is that one side is abrupt, and the other a moderate slope, the latter indicating the direction of the flow from the elongated vent or crater. When the direction of the ridge is from north to south the abrupt side is on the west, and when the direction is from east to west the abrupt side is on the south; thus all the ridges around Meriden present a sort of mural front to the city.

The Hanging Hills are seen to best advantage from the road that follows the ridge south of Crow Hollow (why not call it Ravendale), and crosses what is commonly known as Johnson's Hill. From this outlook the bold, serrated ridge confronts the observer on the north; South Mountain and West Mountain, separated by a narrow valley now appropriated by the city as a reservoir for its water supply. The most westerly of these uplifts, West Mountain, is riven at one point almost to its base by a gorge running north and dividing the ridge into two sections, the eastern and the larger one simulating a vast ruin with partially shattered walls and crumbling towers, while the western section forms a bold prominence nearly a thousand feet in height, being the highest of the series in Connecticut. South Mountain, east of the reservoir, is cleft into three sections by rifts in the rocky mass and gradually rises from its eastern border to its western summit.

Still eastward is Cathole Mountain, so called from a narrow defile that separates it from that just described. This defile, as it was in a state of nature, suggested the famous pass of Thermopylæ, where, "between the mountain on the one hand and the morass upon the other," but one man could pass at a time. But the demands of trade and travel have led to its enlargement and the highway from Meriden to Kensington now passes through it, making one of the most strikingly picturesque drives in Connecticut.

These ridges have mostly been described as trap dikes, though for reasons that will by and by appear, the term is by some geologists considered inappropriate and misleading. That they are made up entirely of eruptive rocks, however, that have sometime

Digitized by Google

been pushed up through fissures in the sandstone in a heated and plastic condition, there is no chance for doubt. That the mass was at first plastic, or of a partially molten character, is evinced by the fact that on coming to the surface it often flowed away from the vent in one or more directions, thus forming a kind of sheet covering a considerable extent of the adjacent surface.

And that it was heated to a high degree is evidenced by the metamorphism of the sandstone or other contiguous rock, both above and below the sheet, and on either side of the rift through which the mass protruded. The metamorphism or change consists sometimes merely in the induration of the adjacent rocks and sometimes in their more or less complete crystalization; the sandstone in some instances assuming a texture and hardness that make it scarcely distinguishable from the trap or eruptive matter. Moreover, while the trap seemed to heat the sandstone, the sandstone in turn seemed to cool the trap more rapidly, and so to change it both in color and texture. It is sometimes difficult to determine the precise line of juncture on account of the change that both kinds of rock have undergone, though at the distance of a few feet, possibly a few inches, in either direction, the distinction is very plain. There are examples of contact of the trap with the sandstone exposed by the recent cutting of the drives up and down East Rock, near New Haven, which belongs to this same series; also a fine example where a vein of trap cuts across the sandstone at Whitneyville. Other examples are described in South Hadley, Massachusetts and at other points, all showing essentially the same characteristics, though there are no very satisfactory exposures as yet in Meriden, the broad and deep slopes of *debris* along the base of the cliffs effectually concealing the line of contact.

But to return to the interesting discussion of which we spoke in the outset. The commonly accepted theory, as to the mode of occurrence of these trap ridges, is that after the sandstone was laid down—or say about the close of the Triassic period—by some profound disturbance of the earth's crust, the whole series of rocks was fractured at various points, and through the fissures thus produced, the trap was pushed to the surface, sometimes only filling the rift like a vein and sometimes overflowing to greater or less extent, and in that condition cooling and hardening and producing the masses as they exist to-day, except that the gradual erosion, or wearing away of the softer sandstone, has served to make them more and more prominent as the ages went by.*

*We make no attempt in this paper to distinguish between the older and more

Digitized by Google

While this theory supposes the several fractures in the series to have been due to the same or similar causes, yet each may have been independent of the others, or only dependent on each other, as one mountain may be dependent upon adjacent mountains. They may have been formed contemporaneously or in succession, following, however, a somewhat definite order and conforming to some definite outline. That is to say, East Rock and Mt. Holyoke may have been formed at the same time, or at periods somewhat remote from each other. Or, to confine the illustration to a narrower range, West Peak and Cathole Mountain may have been pushed up through the sandstone at the same time, or one somewhat in advance of the other. But the rents or fissures were practically independent of each other, and so far as appears now, the one might have been without the other. In other words, the hundred or more ridges that Percival represents on his map of the region presupposes a hundred or more rents in the earth's crust, many of them very intimately related no doubt, and still a hundred separate vents. The other theory as to the mode of occurrence of the trap ridges, and one which was presented by Prof. W. M. Davis, of Harvard University, in a somewhat elaborate paper at the meeting of the American Association for the Advancement of Science at Buffalo, August, 1886, may be briefly stated in the author's own words, as follows—"that nearly all these ridges are the outcropping edges of contemporaneous lava overflows, and that the outcrop of a single sheet is repeated several times by faults nearly paralled to the strike of the beds."

A detailed statement of the evidence bearing on the subject is promised in the forthcoming Seventh Annual Report of the U. S. Geological Survey, for which we shall look with interest. But as we understand the theory, it may be briefly stated thus. The overflow of the trap, whether from few or many vents, formed a continuous and essentially horizontal sheet over a large portion of the area now included in the trap region, *before the occurrence* of the ruptures and dislocations that produced the striking features so apparent now: while the separate ridges, commonly supposed to be due to separate eruptions, are the result of profound fractures and *faulting* of the whole series of rocks, including not only the sandstone and the trap, but the crystalline rocks that lie at still

recent traps, or between that still buried in the sandstone and that exposed upon the surface. This distinction is made by Prof. W. N. Rice in a recent article—Am. Jour. of Science, December, 1886—and illustrated by reference to some exposures in the vicinity of Tariffville, Conn.

Digitized by Google

greater depth. Thus the overflow of the trap and the erection into ridges were separate events, and may have been wide apart in point of time. There are confessedly exceptions to the rule, in the the case of sheets or layers of trap that were sometimes intruded between successive layers of the sandstone, in which case it came to the surface at an angle corresponding to the dip of the strata and may or may not have overflowed the surface. The one theory makes the the forces that produced the original fractures in the crust and gave vent to the molten matter, the same that built up the ridges; the other makes them independent of each other, even though they may have been of the same general character and of similar origin. It makes West Peak and Cathole and Mount Lamentation portions of a common trap sheet, merely separated by great faults, and even recognizes subordinate faults along the clefts that partially subdivide South Mountain and others of like configuration.

It is too soon to attempt a statement of the comparative evidence bearing upon these two theories, and there are problems involved that may well delay the settlement of the question for many a day. The statement of two or three points, however, may help to place the matter fairly before the reader.

1. It has long appeared that that there is a general dip of the sandstone of Connecticut toward the east. It is also in evidence that the trap, in part at least, lies conformably upon the sandstone, and has therefore an easterly dip. One theory would make this dipping of the sandstone the result of an uplift of the whole area along its western border, thus tilting it to the east. And as the dikes or veins of trap have penetrated the strata thus tilted, the presumption is that the eruptions occurred subsequent to the tilting, or possibly contemporaneous with it, the two operations being due to the same general cause.

The other theory assumes that the whole formation, including the sandstone and the eruptive trap, was completed, or at least well advanced, before the disturbance occurred which produced the ridges; and that the latter are due not to fresh ejections of material, but to faulting of the rocks already in place, the downthrow being on the west side of the fracture, thus producing a dip or inclination to the eastward, but each section of faulted area being independent in the position it assumes, and the dip therefore not necessarily uniform. If the sandstone formed but a thin stratum, this question would be easily decided, for the upthrow of any great fault would expose the entire thickness. But the thickness of the formation is too great for reliable evidence on this point.

Digitized by Google

2. Another point worthy of consideration is that if the trap existed as a continuous sheet, it is reasonable to suppose that the rock would be uniform in character, or that the changes in chemical composition, if not in structure, would be gradual rather than abrupt. This does not appear to be the case. The rock differs not only in composition but in structure on opposite sides sometimes of a narrow ravine, to whatever cause that ravine may be due. That a variety should exist is nothing strange, but some cause for the variety might reasonably be expected. Sometimes we find the trap-rock to be homogeneous, and sometimes amygdaloidal; sometimes very compact, sometimes loosely aggregated, and again assuming the porous or vesicular character antecedent to amygdaloidal deposits. And if it be true that amygdaloidal deposits usually occur near a cooling surface, this would not account for the presence of amygdaloid in one ridge and its absence in an adjacent ridge, *if* the existence of the two was due merely to a fracture and fault; for the cooling must have taken place before the faulting occurred.

Altogether, the problem is a perplexing one and whatever may come of the discussion, the effect will be to awaken new interest and make us more familiar with these unique formations in our own vicinity.

Digitized by Google

An Interesting Find.

On a recent excursion to the quarries in Durham, which have yielded from time to time so many interesting specimens of the *fauna* of the Triassic rocks of Connecticut, H. H. Kendrick, a member of the Meriden Scientific Association, brought away several fossil specimens of the *flora* of that interesting period. The first bears some resemblance to the fruit of the early conifers, but is more likely that of a cycad—probably *cycadites*—having a rounded base and being pointed at the other extremity, with a structure more nearly resembling a bud than a well defined nut. Another piece of shale contains two impressions of a similar form.

Another specimen is that of a plant akin to the calamite, though with joints imperfectly defined; probably one of the dwarfed varieties that followed the period of the great coal plants.

Another bit of shale contained small impressions of a similar plant, though too fragmentary to be determined with any certainty; while a small slab showed the wave or ripple marks indicative of a shallow sea.

J. H. C.

Digitized by Google

A List of the Birds of Meriden, Conn.

By Franklin Platt.

With the mountains and wooded hills which constitute the northern and eastern boundaries of Meriden, with the waters of the Quinnipiac running through her borders, with the numerous natural and artificial ponds—some of which are of no mean size—which repose here and there in her valleys, and her alternating stretches of meadow and woodland and an occasional piece of swamp-ground, it would seem as if nature had provided her with all the variety of physical features necessary to accommodate every species of bird likely to be found in any inland town of the State. And if the following list shall be found to be incomplete—if the names of some birds liable to be found here have been omitted—the chances, in my opinion are, that the omissions have occurred, not because of the continuous absence of such species, but because it has not been my good fortune either to discover their presence or to obtain satisfactory evidence of their occurrence.

As my studies of bird life have been so much confined to those birds more generally found in our fields and woods, I have had to rely to a considerable extent on such information as I could get from other persons as to the occurrence of many of the water birds on my list and some of the birds of prey. But in no such case even have I relied on the mere conjecture of any person. And where I have had doubts in the matter I have either omitted the name of the doubtful species entirely, or have included it in the list with such observations as tend to show the probabilities of its occurrence.

And right here I desire to acknowledge the indebtedness I am under to Mrs. Nathan S. Baldwin—by referring to her collection of stuffed birds I have had my doubts removed in more than one instance; to the brothers George and Charles I. Foster and to Franklin T. Ives, Esq., men of considerable experience as sportsmen in this vicinity, all of whom have given me valuable informa-

Digitized by Google

tion on important points. I am also under obligations to Mr. J. A. Allen, the Curator for the Department of Ornithology in the American Museum of Natural History, at New York, for some useful hints in regard to the classifying, etc., of the birds herein named.

The nomenclature used is taken from The Code of Nomenclature adopted by the American Ornithologists' Union.* In some cases I have added in parenthesis the locally more common names.

Where I have mentioned a species as *resident* I have not meant that the same individual birds of that species stay with us the year through the same as our summer birds which are marked as summer residents do through the summer months, but that birds of that species are to be found here throughout the year. Again, in noting a species as *common*, I wish the word to be understood in a comparative sense, particularly when applied to water-birds and birds of prey, meaning that such species are common as compared with others of the same family which are much less common. As a rule, too, most of the species mentioned as common are so only in favorable localities. In some cases I have seen fit to give, in the interest of readers in this vicinity, the localities where certain species may be found.

Order PYGOPODES. Diving Birds.

Suborder PODICIPEDES. Grebes.

Family PODICIPIDÆ. Grebes.

Genus PODILYMBUS Lesson.

1. **Podilymbus podiceps** (Linn.).

Pied-billed Grebe. (Dipper. Hell-Diver.)

Rather common during the spring and fall migrations.

Suborder CEPPHI. Loons and Auks.

Family URINATORIDÆ. Loons.

Genus URINATOR Cuvier.

* The Code of Nomenclature and Check List of North American birds adopted by the American Ornithologists' Union, being the Report of the Committee of the Union on Classification and Nomenclature. New York, 1886.

Digitized by Google

2. **Urinator imber** (GUNN.).

Loon.

Rare visitant. (Has been seen late in the fall of the year at the Foster Brothers' Pond and at Black Pond.)

ORDER ANSERES. LAMELLIROSTRAL SWIMMERS.

FAMILY ANATIDÆ. DUCKS, GEESE AND SWANS.

SUBFAMILY MERGINÆ. MERGANSERS.

GENUS LOPHODYTES REICHENBACH.

3. **Lophodytes cucullatus** (LINN.).

Hooded Merganser.

SUBFAMILY ANATINÆ. RIVER DUCKS.

GENUS ANAS LINNÆUS.

4. **Anas boschas** LINN.

Mallard.

Uncommon visitant. (Specimens have been taken at Foster Brothers' Pond.)

5. **Anas obscura** GMEL.

Black Duck.

Rather common summer resident, but most numerous in the fall and spring.

SUBGENUS MARECA STEPHENS.

6. **Anas Americana** GMEL.

Baldpate.

Rare spring and autumn visitant.

SUBGENUS NETTION KAUP.

7. **Anas carolinensis** GMELIN.

Green-winged Teal.

Not uncommon during the migrations, particularly in the fall.

Digitized by Google

SUBGENUS **QUERQUEDULA** STEPHENS.

8. **Anas discors** LINN.

Blue-winged Teal.

Rather common migrant, especially in the fall.

GENUS **AIX** BOIE.

9. **Aix sponsa** (LINN.).

Wood Duck.

Rather common summer resident.

GENUS **CHARITONETTA** STEJNEGER.

10. **Charitonetta albeola** (LINN.).

Bufflehead.

Occasional visitant.

SUBFAMILY **ANSERINÆ.** GEESE.

GENUS **BRANTA** SCOPOLI.

11. **Branta canadensis** (LINN.).

Canada Goose.

Not uncommon visitant during the migrations. Black Pond, North Farms Reservoir.

12. **Branta bernicla** (LINN.).

Brant.

Very rare visitant. The only instance of its occurrence which has come to my notice was that of four years ago (1882), when Mr. Charles I. Foster captured two out of a small flock that had stopped at the Foster Brothers' Pond.

ORDER HERODIONES. HERONS, STORKS, IBISES, ETC.

SUBORDER HERODII. HERONS, EGRETS, BITTERNS, ETC.

FAMILY **ARDEIDÆ.** HERONS, BITTERNS, ETC.

SUBFAMILY **BOTAURINÆ.** BITTERNS.

GENUS **BOTAURUS** HERMANN.

SUBGENUS **BOTAURUS.**

Digitized by Google

13. **Botaurus lentiginosus** (MONTAG.).

American Bittern.

Probably an occasional summer resident. Mr. F. T. Ives says it was quite common some years ago around the North Farms Reservoir.

SUBFAMILY **ARDEINÆ.** HERONS AND EGRETS.

GENUS **ARDEA** LINNÆUS.

SUBGENUS **ARDEA.**

14. **Ardea herodias** LINN.

Great Blue Heron.

A not uncommon visiter in spring and fall.

SUBGENUS **HERODIAS** BOIE.

15. **Ardea egretta** GMEL.

American Egret. (Great White Heron.)

Very rare visitant. Has been seen at Black Pond and at Foster's Pond. Mrs. Baldwin has a fine specimen of this elegant bird, which was taken a few years ago at the North Farms Reservoir.

SUBGENUS **BUTORIDES** BLYTH.

16. **Ardea virescens** LINN.

Green Heron.

A not uncommon summer resident.

GENUS **NYCTICORAX** STEPHENS.

SUBGENUS **NYCTICORAX.**

17. **Nycticorax nycticorax nævius** (BODD.).

Black-crowned Night Heron. (Quawk.)

Rather common summer resident.

ORDER PALUDICOLÆ. CRANES, RAILS, ETC.

SUBORDER RALLI. RAILS, GALLINULES, COOTS, ETC.

FAMILY **RALLIDÆ.** RAILS, GALLINULES AND COOTS.

SUBFAMILY **RALLINÆ.** RAILS.

GENUS **PORZANA** VIEILLOT.

Digitized by Google

SUBGENUS **PORZANA.**

18. **Porzana carolina** (LINN.).

Sora.

Specimens have been taken in this vicinity, but I cannot learn definitely whether they ever breed here or not.

SUBFAMILY **FULICINÆ.** COOTS.

GENUS **FULICA** LINNÆUS.

19. **Fulica americana** GMEL.

American Coot.

Occasional visitant, mostly in the autumn.

ORDER LIMICOLÆ. SHORE BIRDS.

FAMILY **SCOLOPACIDÆ.** SNIPES, SANDPIPERS, ETC.

GENUS **PHILOHELA** GRAY.

20. **Philohela minor** (GMEL.).

American Woodcock.

Rather common summer resident. More numerous in spring and fall during the migrations, particularly in the fall.

GENUS **GALLINAGO** LEACH.

21. **Gallinago delicata** (ORD.).

Wilson's Snipe. (Known as "English Snipe," "Jack Snipe," etc.)

More or less common during the migrations.

GENUS **TOTANUS** BECHSTEIN.

SUBGENUS **GLOTTIS** KOCH.

22. **Totanus melanoleucus** (GMEL.).

Greater Yellow-legs.

Not uncommon during the migrations.

23. **Totanus flavipes** (GMEL.).

Yellow-legs. (Smaller Yellow-legs.)

Only during the migrations. More common in the fall. Both this and the preceding species were quite common around the North Farms Reservoir some years ago.

Digitized by Google

GENUS **BARTRAMIA** LESSON.

24. **Bartramia longicauda** (BECHST.).

Bartramian Sandpiper. (Upland Plover. Grass Plover.)

Not uncommon summer resident. Common during the migrations.

GENUS **ACTITIS** ILLIGER.

25. **Actitis macularia** (LINN.).

Spotted Sandpiper. (Tip-up. Teeter-tail. Peet-weet.)

Common summer resident.

ORDER GALLINÆ. GALLINACEOUS BIRDS.

SUBORDER PHASIANI. PHEASANTS, GROUSE, PARTRIDGES, QUAILS, ETC.

FAMILY **TETRAONIDÆ.** GROUSE, PARTRIDGES, ETC.

SUBFAMILY **PERDICINÆ.** PARTRIDGES.

GENUS **COLINUS** LESSON.

26. **Colinus virginianus** (LINN.).

Bob-white. (Quail.)

Common resident.

SUBFAMILY **TETRAONINÆ.** GROUSE.

GENUS **BONASA** STEPHENS.

27. **Bonasa umbellus** (LINN.).

Ruffed Grouse. (Almost always spoken of in this vicinity as *Partridge.*)

Common resident.

ORDER COLUMBÆ. PIGEONS.

FAMILY **COLUMBIDÆ.** PIGEONS.

GENUS **ECTOPISTES** SWAINSON.

28. **Ectopistes migratorius** (LINN.).

Passenger Pigeon. (Wild Pigeon.)

Only during the fall migrations and then not common. From thirty to fifty years ago they were very plenty every fall.

Digitized by Google

GENUS **ZENAIDURA** BONAPARTE.

29. **Zenaidura macroura** (LINN.)

Mourning Dove.

Summer resident. Not uncommon.

ORDER RAPTORES. BIRDS OF PREY.

SUBORDER FALCONES. VULTURES, FALCONS, HAWKS, BUZZARDS, EAGLES, KITES, HARRIERS, ETC.

FAMILY **FALCONIDÆ.** VULTURES, FALCONS, HAWKS, EAGLES, ETC.

SUBFAMILY **ACCIPITRINÆ.** KITES, BUZZARDS, HAWKS, GOSHAWKS, EAGLES, ETC.

GENUS **CIRCUS** LACÉPÈDE.

30. **Circus hudsonius** (LINN.).

Marsh Hawk.

Rather common in spring, summer and fall. Undoubtedly breeds here more or less every spring.

GENUS **ACCIPITER** BRISSON.

SUBGENUS **ACCIPITER.**

31. **Accipiter velox** (WILS.).

Sharp-shinned Hawk. (This species is generally known here as the Pigeon Hawk, as well as the true Pigeon Hawk, *Falco columbarius.*)

More or less common summer resident.

32. **Accipiter cooperi** (BONAP.).

Cooper's Hawk. (Chicken Hawk.)

Common summer resident.

GENUS **BUTEO** CUVIER.

33. **Buteo borealis** (GMEL.).

Red-tailed Hawk. (Hen Hawk.)

Known to occasionally breed here. More numerous in fall and spring and sometimes seen in winter.

34. **Buteo lineatus** (GMEL.).

Red-shouldered Hawk.

More common than the preceding species throughout the year.

Digitized by Google

GENUS **HALIÆETUS** SAVIGNY.

35. **Haliæetus leucocephalus** (LINN.).

Bald Eagle.

I am informed that a pair of these birds bred a few years ago in the vicinity of West Peak. Thirty years or more ago a nest was found and the eggs secured on the mountains southeast of the town and the male bird was shot. A pair has also been seen several times during the past spring and summer in the eastern part of the town, which probably nested and raised their young on the mountains there.

SUBFAMILY **FALCONINÆ**. FALCONS.

GENUS **FALCO** LINNÆUS.

SUBGENUS **ÆSALON** KAUP.

36. **Falco columbarius** LINN.

Pigeon Hawk.

Occasional in spring, fall and winter.

SUBGENUS **TINNUNCULUS** VIEILLOT.

37. **Falco sparverius** LINN.

American Sparrow Hawk.

Rather common every year.

SUBFAMILY **PANDIONINÆ**. OSPREYS.

GENUS **PANDION** SAVIGNY.

38. **Pandion haliaëtus carolinesis** (GMEL.).

American Osprey. (Fish Hawk.)

Uncommon visitor.

SUBORDER STRIGES. OWLS.

FAMILY **BUBONIDÆ**. HORNED OWLS, ETC.

GENUS **ASIO** BRISSON.

39. **Asio wilsonianus** (LESS.).

American Long-eared Owl.

Resident. Rather rare.

40. **Asio accipitrinus** (PALL.).

Short-eared Owl.

Resident. Perhaps more common than the preceding species.

Digitized by Google

GENUS **SYRNIUM** SAVIGNY.

41. **Syrnium nebulosum** (FORST.).
Barred Owl.

Resident. Not uncommon.

GENUS **MEGASCOPS** KAUP.

42. **Megascops asio** (LINN.).
Screech Owl.

Resident. The most common of our owls. We have both the *red* and the *gray* or *mottled* forms; the latter predominating.

GENUS **BUBO** CUVIER.

43. **Bubo virginianus** (GMEL.).
Great Horned Owl. (Hoot Owl.)

Resident. Not common. Much less common than many years ago.

ORDER COCCYGES. CUCKOOS, ETC.

SUBORDER CUCULI. CUCKOOS, ETC.

FAMILY **CUCULIDÆ.** CUCKOOS, ANIS, ETC.

SUBFAMILY **COCCYGINÆ.** AMERICAN CUCKOOS.

GENUS **COCCYZUS** VIEILLOT.

44. **Coccyzus americanus** (LINN.).
Yellow-billed Cuckoo.

Uncommon summer resident.

45. **Coccyzus erythrophthalmus** (WILS.).
Black-billed Cuckoo.

Common summer resident.

SUBORDER ALCYONES. KINGFISHERS.

FAMILY **ALCEDINIDÆ.** KINGFISHERS.

GENUS **CERYLE** BOIE.

SUBGENUS **STREPTOCERYLE** BONAPARTE.

46. **Ceryle alcyon** (LINN.).
Belted Kingfisher.

Summer resident. Not uncommon.

Digitized by Google

Order PICI. Woodpeckers, Wrynecks, Etc.

Family PICIDÆ. Woodpeckers.

Genus DRYOBATES Boie.

47. **Dryobates villosus** (Linn.).
Hairy Woodpecker.

Rare resident. More often seen in winter.

48. **Dryobates pubescens** (Linn.).
Downy Woodpecker.

Rather common resident, but like *D. villosus* more common in fall and winter, at which seasons it is the most common of this family.

Genus MELANERPES Swainson.

Subgenus MELANERPES.

49. **Melanerpes erythrocephalus** (Linn.).
Red-headed Woodpecker.

Very rare in summer and fall. Has been known to breed here within a few years.

Genus COLAPTES Swainson.

50. **Colaptes auratus** (Linn.).
Flicker. (Usually known here as Yellowhammer. Other local names High-hole, Wake-up, etc.)

Quite common summer resident. Has been seen here in winter.

Order MACROCHIRES. Goatsuckers, Swifts, Etc.

Suborder CAPRIMULGI. Goatsuckers, Etc.

Family CAPRIMULGIDÆ. Goatsuckers, Etc.

Genus ANTROSTOMUS Gould.

51. **Antrostomus vociferus** (Wils.).
Whip-poor-will.

Not uncommon summer resident.

Genus CHORDEILES Swainson.

52. **Cordeiles virginianus** (Gmel.).
Nighthawk.

Not uncommon summer resident.

Digitized by Google

SUBORDER CYPSELI. SWIFTS.

FAMILY **MICROPODIDÆ.** SWIFTS.

SUBFAMILY **CHÆTURINÆ.** SPINE-TAILED SWIFTS.

GENUS **CHÆTURA** STEPHENS.

53. **Chætura pelagica** (LINN.).

Chimney Swift. (Chimney Swallow.)

Very common summer resident.

SUBORDER TROCHILI. HUMMING BIRDS.

FAMILY **TROCHILIDÆ.** HUMMING BIRDS.

GENUS **TROCHILUS** LINNÆUS.

SUBGENUS **TROCHILUS.**

54. **Trochilus colubris** LINN.

Ruby-throated Humming Bird.

Rather common summer resident.

ORDER PASSERES. PERCHING BIRDS.

SUBORDER CLAMATORES. SONGLESS PERCHING BIRDS.

FAMILY **TYRANNIDÆ.** TYRANT FLYCATCHERS.

GENUS **TYRANNUS** CUVIER.

55. **Tyrannus tyrannus** (LINN.).

King-bird.

Common summer resident.

GENUS **MYIARCHUS** CABANIS.

56. **Myiarchus crinitus** (LINN.).

Crested Flycatcher.

Rather rare summer resident. (I saw a pair of these birds frequently in Yale's Woods in the spring and summer of 1886, and so late as the 15th day of June; from which fact I conclude they were nesting there. Mr. Albert Boardman has a specimen of the eggs of this flycatcher in his collection, which he took from a nest in the hollow of a tree near Mr. Winfield Coe's, several years ago, and Mr. Samuel Jackson found a nest and obtained the eggs on Mr. Richard Miller's farm in 1884.

Digitized by Google

GENUS **SAYORNIS** BONAPARTE.

57. **Sayornis phœbe** (LATH.).
Phœbe.
Common summer resident.

GENUS **CONTOPUS** CABANIS.

58. **Contopus virens** (LINN.).
Wood Pewee. (Wood Phœbe.)
Common summer resident.

GENUS **EMPIDONAX** CABANIS.

59. **Empidonax minimus** BAIRD.
Least Flycatcher.
Summer resident.

SUBORDER OSCINES. SONGBIRDS.

FAMILY **CORVIDÆ.** CROWS, JAYS, MAGPIES, ETC.

SUBFAMILY **GARRULINÆ.** MAGPIES AND JAYS.

GENUS **CYANOCITTA** STRICKLAND.

60. **Cyanocitta cristata** (LINN.).
Blue Jay.
Not uncommon resident. More common in fall and spring,

SUBFAMILY **CORVINÆ.** CROWS.

GENUS **CORVUS** LINNÆUS.

61. **Corvus americanus** AUD.
American Crow.
Resident—quite common.

FAMILY **ICTERIDÆ.** BLACKBIRDS, ORIOLES, ETC.

GENUS **DOLICHONYX** SWAINSON.

62. **Dolichonyx oryzivorus** (LINN.).
Bobolink.
Common summer resident.

GENUS **MOLOTHRUS** SWAINSON.

Digitized by Google

63. **Molothrus ater** (BODD.).
Cowbird.
Common summer resident.

GENUS **AGELAIUS** VIEILLOT.

64. **Agelaius phœniceus** (LINN.).
Red-winged Blackbird.
Common summer resident.

GENUS **STURNELLA** VIEILLOT.

65. **Sturnella magna** (LINN.).
Meadow Lark.
Summer resident; much less common than formerly.

GENUS **ICTERUS** BRISSON.

SUBGENUS **PENDULINUS** VIEILLOT.

66. **Icterus spurius** (LINN.).
Orchard Oriole.
Rare summer resident.

SUBGENUS **YPHANTES** VIEILLOT.

67. **Icterus galbula** (LINN.).
Baltimore Oriole.
Common summer resident.

GENUS **SCOLECOPHAGUS** SWAINSON.

68. **Scolecophagus carolinus** (MULL.).
Rusty Blackbird.
More or less common in spring and autumn.

GENUS **QUISCALUS** VIEILLOT.

SUBGENUS **QUISCALUS.**

69. **Quiscalus quiscula æneus** (RIDGW.).
Bronzed Grackle. (Crow Blackbird.)
Common summer resident. Very numerous in spring and fall. The true *Q. quiscula*, or Purple Grackle, may occur here, or at least an intermediate form approaching it.

FAMILY **FRINGILLIDÆ.** FINCHES, SPARROWS, ETC.

Digitized by Google

Genus **PINICOLA** Vieillot.

70. **Pinicola enucleator** (Linn.).

Pine Grosbeak.

Occasional winter visitant. (A few winters ago—I think during the winter of 1882–3—these birds were quite common in Meriden, visiting in small flocks the door-yards even of our city residents. They were so tame as to allow people to approach them in some instances to within a few feet.

Genus **PASSER** Brisson.

71. **Passer domesticus** (Linn.).

House Sparrow. (English Sparrow.)

Abundant resident. Introduced into Meriden about twenty or twenty-one years ago by one of our prominent citizens who purchased three pairs of them in New York for which he paid eleven dollars. The blame which this man must naturally take to himself for bringing such unpopular residents into our city is doubtless lessened somewhat by the reflection that they would have reached us sooner or later anyway.

Genus **CARPODACUS** Kaup.

72. **Carpodacus purpureus** (Gmel.).

Purple Finch. (Generally known in this locality as Red Linnet.)

Summer resident. Has been seen here in winter.

Genus **LOXIA** Linnæus.

73. **Loxia curvirostra minor** (Brehm).

American Crossbill. (*Red Crossbill.*)

A not common winter visitor.

Genus **ACANTHIS** Bechstein.

74. **Acanthis linaria** (Linn.).

Redpoll.

Irregular winter visitant.

Genus **SPINUS** Koch.

75. **Spinus tristis** (Linn.).

American Goldfinch. (Yellowbird, Thistlebird.)

Common summer resident. Not uncommon through the year.

Digitized by Google

76. **Spinus pinus** (WILS.).
Pine Siskin. (Pine Linnet.)
Spring and autumn migrant. Possibly winter visitant.

GENUS **PLECTROPHENAX** STEJNEGER.

77. **Plectrophenax nivalis** (LINN.).
Snowflake. (White Snowbird.)
More or less common winter visitant.

GENUS **POOCÆTES** BAIRD.

78. **Poocætes gramineus** (GMEL.).
Vesper Sparrow.
Very common summer resident.

GENUS **AMMODRAMUS** SWAINTON.

SUBGENUS **PASSERCULUS** BONAPARTE.

79. **Ammodramus sandwichensis savanna** (WILS.).
Savanna Sparrow.
Not uncommon summer resident.

GENUS **ZONOTRICHIA** SWAINSON.

80. **Zonotrichia albicollis** (GMEL.).
White-throated Sparrow.
Very common spring and autumn migrant.

GENUS **SPIZELLA** BONAPARTE.

81. **Spizella monticola** (GMEL.).
Tree Sparrow.
Common in fall and winter.

82. **Spizella socialis** (WILS.).
Chipping Sparrow.
Very common summer resident.

83. **Spizella pusilla** (WILS.).
Field Sparrow.
Common Summer resident.

GENUS **JUNCO** WAGLER.

Digitized by Google

84. **Junco hyemalis** (LINN.).

Slate-colored Junco. (Black Snow Bird.)

Very common in the fall. More or less common in winter and spring.

GENUS **MELOSPIZA** BAIRD.

85. **Melospiza fasciata** (GMEL.).

Song Sparrow.

Very common summer resident.

GENUS **PASSERELLA** SWAINSON.

86. **Passerella iliaca** (MERR.).

Fox Sparrow.

Spring and fall migrant.

GENUS **PIPILO** VIEILLOT.

87. **Pipilo erythrophthalmus** (LINN.).

Towhee. (Ground Robin, Chewink or Pewink.)

Common summer resident; often staying till quite late in the fall.

GENUS **HABIA** REICHENBACH.

88. **Habia ludoviciana** (LINN.).

Rose-breasted Grosbeak.

Summer resident; formerly rare—more common late years.

GENUS **PASSERINA** VIEILLOT.

89. **Passerina cyanea** (LINN.).

Indigo Bunting.

Rather common summer resident.

FAMILY **TANAGRIDÆ.** TANAGERS.

GENUS **PIRANGA** VIEILLOT.

90. **Piranga erythromelas** VIEILL.

Scarlet Tanager.

Summer resident. Not very common.

FAMILY **HIRUNDINIDÆ.** SWALLOWS.

Digitized by Google

GENUS **PROGNE** BOIE.

91. **Progne subis** (LINN.).

Purple Martin.

Summer resident; formerly quite common; more rare of late years.

GENUS **PETROCHELIDON** CABANIS.

92. **Petrochelidon lunifrons** (SAY).

Cliff Swallow. (Eave Swallow.)

Summer resident. Not common, but builds regularly in some parts of the town.

GENUS **CHELIDON** FORSTER.

93. **Chelidon erythrogaster** (BODD.).

Barn Swallow.

Very common summer resident.

GENUS **TACHYCINETA** CABANIS.

94. **Tachycineta bicolor** (VIEILL.).

Tree Swallow.

Uncommon summer resident.

GENUS **CLIVICOLA** FORSTER.

95. **Clivicola riparia** (LINN.).

Bank Swallow. (Sand Martin.)

Not uncommon summer resident. (A few build every year in a bank near the Foster Brothers' Pond.)

FAMILY **AMPELIDÆ.** WAXWINGS, ETC.

SUBFAMILY **AMPELINÆ.** WAXWINGS.

GENUS **AMPELIS** LINNÆUS.

96. **Ampelis cedrorum** (VIEILL.).

Cedar Waxwing. (Cedar Bird.)

Not very common summer resident. More numerous in fall and spring, and seen occasionally in sheltered localities during the winter.

FAMILY **LANIIDÆ.** SHRIKES.

Digitized by Google

GENUS **LANIUS** LINNÆUS.

97. **Lanius borealis** VIEILL.

Northern Shrike. (Butcher Bird.)

Occasional winter visitant. (I have noticed that some egg collectors in this vicinity are calling the Crested Flycatcher the Butcher Bird.)

FAMILY **VIREONIDÆ.** VIREOS.

GENUS **VIREO** VIEILLOT.

SUBGENUS **VIREOSYLVA** BONAPARTE.

98. **Vireo olivaceus** (LINN.).

Red-eyed Vireo.

Very common summer resident.

99. **Vireo gilvus** (VIEILL.).

Warbling Vireo.

Rather common summer resident.

SUBGENUS **LANIVIREO** BAIRD.

100. **Vireo flavifrons** VIEILL.

Yellow-throated Vireo.

Rather common summer resident.

101. **Vireo solitarius** (WILS.)

Blue-headed Vireo.

Spring and autumn migrant. Not common.

SUBGENUS **VIREO** VIEILLOT.

102. **Vireo noveboracensis** (GMEL.)

White-eyed Vireo.

Rather common summer resident.

FAMILY **MNIOTILTIDÆ.** WOOD-WARBLERS.

GENUS **MNIOTILTA** VIEILLOT.

103. **Mniotilta varia** (LINN.).

Black and White Warbler. (Black and White Creeping Warbler.)

Very common summer resident.

Digitized by Google

GENUS **HELMINTHOPHILA** RIDGWAY.

104. **Helminthophila ruficapilla** (WILS.).

Nashville Warbler.

Common summer resident.

GENUS **COMPSOTHLYPIS** CABANIS.

105. **Compsothlypis americana** (LINN.).

Parula Warbler. (Blue Yellow-backed Warbler.)

Probably rare summer resident. I have never seen it except during the spring migrations no later than May 11, and then only rarely. Mr. H. H. Kendrick found an old nest last summer which in my opinion was a nest of this species of warbler.

GENUS **DENDROICA** GRAY.

SUBGENUS **PERISSOGLOSSA** BAIRD.

106. **Dendroica tigrina** (GMEL.)

Cape May Warbler.

Rare spring and autumn migrant. I have never seen but one bird of this species in Meriden (Yale's Woods, May 26th, 1885).

SUBGENUS **DENDROICA** GRAY.

107. **Dendroica æstiva** (GMEL.).

Yellow Warbler. (Summer Yellow Bird.)

Very common summer resident.

108. **Dendroica cærulescens** (GMEL.).

Black-throated Blue Warbler.

Only during the migrations. Rather rare.

109. **Dendroica coronata** (LINN.).

Myrtle Warbler. (Yellow-rumped Warbler.)

Only during the migrations.

110. **Dendroica maculosa** (GMEL.).

Magnolia Warbler. (Black and Yellow Warbler.)

Only during the migrations.

111. **Dendroica pennsylvanica** (LINN.).

Chestnut-sided Warbler.

Rare summer resident. Not often observed even during the migrations.

Digitized by Google

112. **Dendroica striata** (FORST.).
Black-poll Warbler.
Spring and autumn migrant.

113. **Dendroica blackburniæ** (GMEL.).
Blackburnian Warbler.
Only spring and autumn migrant.

114. **Dendroica virens** (GMEL.).
Black-throated Green Warbler.
Spring and fall migrant.

115. **Dendroica palmarum hypochrysea** (RIDGW.).
Yellow Palm Warbler. (Yellow Red-poll.)
More or less common during the migrations.

GENUS **SEIURUS** SWAINSON.

116. **Seiurus aurocapillus** (LINN.).
Oven-bird.
Quite common summer resident.

117. **Seiurus noveboracensis** (GMEL.).
Water Thrush.
Spring and fall migrant. I saw a pair of these birds in a swamp on the Greer farm on the first day of June, 1884, which was so late in the season that I presume they stayed through the summer.

GENUS **GEOTHLYPIS** CABANIS.

SUBGENUS **GEOTHLYPIS** CABANIS.

118. **Geothlypis trichas** (LINN.).
Maryland Yellow-throat.
Quite common summer resident.

GENUS **ICTERIA** VIEILLOT.

119. **Icteria virens** (LINN.).
Yellow-breasted Chat.
Occasional summer resident. Commonly seen only in the spring.

GENUS **SETOPHAGA** SWAINSON.

Digitized by Google

120. **Setophaga ruticilla** (LINN.).
American Redstart.
Very common summer resident.

FAMILY **TROGLODYTIDÆ.** WRENS, THRASHERS, ETC.

SUBFAMILY **MIMINÆ.** THRASHERS.

GENUS **MIMUS** BOIE.

121. **Mimus polyglottos** (LINN.).
Mockingbird.
Extremely rare summer visitant. The only authentic instance I have of the taking of this bird in Meriden dates back about thirty years ago, when one was shot in the southern part of the town.

GENUS **GALEOSCOPTES** CABANIS.

122. **Galeoscoptes carolinensis** (LINN.).
Catbird.
Very common summer resident.

GENUS **Harporhynchus** CABANIS.

SUBGENUS **METHRIOPTERUS** REICHENBACH.

123. **Harporhynchus rufus** (LINN.).
Brown Thrasher.
Very common summer resident.

SUBFAMILY **TROGLODYTINÆ.** WRENS.

GENUS **TROGLODYTES** VIEILLOT.

SUBGENUS **TROGLODYTES.**

124. **Troglodytes aëdon** VIEILL.
House Wren.
More or less common summer resident. Not as plenty as formerly.

FAMILY **CERTHIIDÆ.** CREEPERS.

GENUS **CERTHIA** LINNÆUS.

125. **Certhia familiaris americana** (BONAP.).
Brown Creeper.
Rather rarely seen in autumn or winter.

Digitized by Google

FAMILY **PARIDÆ.** NUTHATCHES AND TITS.

SUBFAMILY **SITTINÆ.** NUTHATCHES.

GENUS **SITTA** LINNÆUS.

126. **Sitta carolinensis** (LATH.).
White-breasted Nuthatch.

Rather rare resident. More common in spring, autumn and winter.

SUBFAMILY **PARINÆ.** TITMICE.

GENUS **PARUS** LINNÆUS.

SUBGENUS **PARUS** LINNÆUS.

127. **Parus atricapillus** LINN.
Chickadee.

Resident; but not common in the summer. Quite common in fall and winter.

FAMILY **SYLVIIDÆ.** WARBLERS, KINGLETS, GNATCATCHERS.

SUBFAMILY **REGULINÆ.** KINGLETS.

GENUS **REGULUS** CUVIER.

128. **Regulus satrapa** LICHT.
Golden-crowned Kinglet.

Only during the winter and spring, and then only occasional.

129. **Regulus calendula** (LINN.).
Ruby-crowned Kinglet.

Spring and fall migrant.

FAMILY **TURDIDÆ.** THRUSHES, SOLITAIRES, STONECHATS, BLUEBIRDS, ETC.

SUBFAMILY **TURDINÆ.** THRUSHES.

GENUS **TURDUS** LINNÆUS.

SUBGENUS **HYLOCICHLA** BAIRD.

130. **Turdus mustelinus** GMEL.
Wood Thrush.

Very common summer resident.

Digitized by Google

131. **Turdus fuscescens** STEPH.
Wilson's Thrush. (Veery.)
Common summer resident.

132. **Turdus aliciæ** BAIRD.
Gray-cheeked Thrush.
Only during the migrations.

133. **Turdus ustulatus swainsonii** (CAB.).
Olive-backed Thrush.
Only during the migrations.

134. **Turdus aonalaschkæ pallasii** (CAB.).
Hermit Thrush.
Spring and autumn migrant. Not often seen or else mistaken for Wood Thrush or for Wilson's Thrush.

GENUS **MERULA** LEACH.

135. **Merula migratoria** (LINN.).
American Robin.
Very common summer resident. Occasional winter resident.

GENUS **SIALIA** SWAINSON.

316. **Sialia sialis** (LINN.).
Bluebird.
Common summer resident.

Digitized by Google

Additional Plants

Found growing in Meriden, Conn., since issue of Catalogue in 1885.

IDENTIFIED BY MRS. E. B. KENDRICK.
(*Director of the Botanical Department of the Meriden Scientific Association.*)

Order 1. RANUNCULACEÆ.

RANUNCULUS, L.

fascicularis, Muhl. Buttercup.

Order 4. BERBERIDACEÆ.

PODOPHYLLUM, L.

peltatum, L. Mandrake.

Order 9. CRUCIFERÆ.

DENTARIA, L.

laciniata, Muhl. Pepper-root.

Order 10. VIOLACEÆ.

VIOLA, L.

pubescens, Ait. var. **scabriuscula,** Torr. and Gray.

Order 14. CARYOPHYLLACEÆ.

SILENE, L.

INFLATA, Smith. Bladder Campion.

ANYCHIA, Michx.

dichotoma, Michx. Forked Chickweed.

Digitized by Google

Order 15. PORTULACACEÆ.

PORTULACA, Tourn.

GRANDIFLORA, Gray. Purslane. Escaped.

Order 19. GERANIACEÆ.

GERANIUM, L.

PUSILLUM, L. Small-flowered Cranesbill.

ERODIUM, L'Her.

CICUTARIUM, L'Her. Storksbill.

Order 27. LEGUMINOSÆ.

CORONILLA, L.

varia, L. Purple Coronilla. Escaped.

Order 28. ROSACEÆ.

POTENTILLA, L.

Canadensis, L. var. **simplex**, Torr. and Gray. Cinque-foil.

AMELANCHIER, Medic.

Canadensis, Torr. and Gray. var. **oblongifolia.** Shad-bush.

Order 36. UMBELLIFERÆ.

HERACLEUM, L.

lanatum, Michx. Cow-Parsnip.

Order 39. CAPRIFOLIACEÆ.

SAMBUCUS, Tourn.

pubens, Michx. Red-berried Elder.

Order 42. COMPOSITÆ.

DIPLOPAPPUS, Cass.

linariifolius, Hook. Double-bristled Aster.

Order 45. ERICACEÆ.

VACCINIUM, L.

Pennsylvanicum, Lam. Dwarf Blueberry.

Order 51. OROBANCHACEÆ.

EPIPHEGUS, Nutt.

Virginiana, Bart. Beechdrops.

Digitized by Google

Order 52. SCROPHULARIACEÆ.

VERONICA, L.

Virginica, L. Culver's Root.

GERARDIA, L.

pedicularia, L. Small False Foxglove.

ILYSANTHES, Raf.

gratioloides, Benth. False Pimpernel.

Order 54. VERBENACEÆ.

PHRYMA, L.

Leptostachya, L. Lopseed, Rare.

Order 62. ASCLEPIADACEÆ.

ASCLEPIAS, L.

obtusifolia, Michx. Milkweed.

Order 74. JUGLANDACEÆ.

CARYA, Nutt.

tomentosa, Nutt. White-heart Hickory.

Order 75. CUPULIFERÆ.

QUERCUS, L.

bicolor, Willd. Swamp White Oak.

coccinea, Wang. Scarlet Oak.

CORYLUS, Tourn.

Americana, Walt. Wild Hazel-Nut.

Order 77. BETULACEÆ.

BETULA, Tourn.

lutea, Michx, f. Yellow Birch.

Order 78. SALICACEÆ.

SALIX, Tourn.

myrtilloides, L. Myrtle-leaved Willow.

DECIPIENS, Hoffm. Brittle Willow.

POPULUS, Tourn.

DILATATA, Ait. Lombardy Poplar.

Digitized by Google

Order 79. CONIFERÆ.

LARIX, Tourn.

Americana, Michx. Tamarack.

JUNIPERUS, L.

communis, L. Juniper.

Virginiana, L. Red Cedar.

Order 87. LILIACEÆ.

ASPARAGUS, L.

OFFICINALIS, L. Garden Asparagus. Escaped.

Order 92. CYPERACEÆ.

ERIOPHORUM, L.

polystachyon, L. Cotton-grass.

CAREX, L.

miliacea, Muhl. Sedge.

Order 93. GRAMINEÆ.

GYMNOSTICHUM, Schreb.

Hystrix, Schreb. Bottle-brush Grass.

Order 95. FILICES.

CAMPTOSORUS, Link.

rhizophyllus, Link. Walking Leaf. Rare.

CYSTOPTERIS, Bernhardi.

fragilis, Bernh. var. DENTATA, Hook. Bladder Fern.

PHEGOPTERIS, Fée.

hexagonoptera, Fée. Beech Fern.

Order 96. LYCOPODIACEÆ.

LYCOPODIUM, L., Spring.

complanatum, L. Ground Pine.

Digitized by Google

West Peak, and What It Saith.

By Rev. J. T. Petteb.

[West Peak is the name which we, Meridenites, give to the most westerly of our "Hanging Hills." It is, by Prof. Guyot's survey, 995 feet above the waters of the Sound, and, though far from being the highest mountain in the State (Mt. Brace in Saulsbury being 2225 feet high), is, by considerable, the highest of the trap dikes of the Connecticut Valley. Geologists are agreed, I believe, in thinking that the valley, which stretches from Hartford to New Haven, was once an estuary or arm of the sea, and Percival, the distinguished geologist of Connecticut, was the first to show how, by the eruption of the trap across the valley in Meriden, the Connecticut River was made to change its course, and empty at Saybrook instead of New Haven. By a poetic license which, I think, perfectly pardonable, I have taken a part for the whole, and spoken of West Peak as being formed under the ocean.

That the trap was erupted under water seems to be the concurrent opinion of geologists from Lyell to Le Conte. Says Lyell (Elements of Geology, p. 115), "The recent examiation of the igneous rocks of Sicily has proved that all the more ordinary varieties of European trap have been there produced *under the waters of the sea.*" And Le Conte, in his admirable "Elements," p. 206, says "Sometimes similar sheets (of trap) are found between the strata (of sandstone,) as if *outpoured on the sea-bottom*, and afterwards covered with sediment." And Dana everywhere speaks of the trap of the Connecticut valley as erupted *through the sandstone*, which was, of course, formed under water.

As Owen says that the *mastodon* ranged "throughout the tropical and temperate latitudes," and as its bones have been found (in this case associated with a human skull,) as near as Worcester, Mass., on the east, and Cohoes and Newburg, N. Y., on the west; and as Dr. Percival (Geological Report of Conn., p. 465,) says "a vertebra of a mammoth was found in New Britain," I think it no stretch of the imagination to conceive of the mastodons as "roaming through these lands;" especially in view of the thought that the mammoth spoken of by Dr. Percival was probably a mastodon, the difference between the vertebrae of these mammals being hardly distinguishable.

The admirable article by Prof. T. Stery Hunt, Mass- Inst. Tech., Boston, *Fossil Footprints*, in the seventh Vol. of Appleton's American Cyclopaedia, is my authority for my prehistoric animals. "More recent studies of the fossil remains of these animals, which have been carefully made by various naturalists, and especially by Cope, have made us acquainted with that curious class of animals, the *dinosaurs*. These creatures constituted numerous genera and species, some of gigantic size, others comparatively small; some feeding on plants and others car-

Digitized by Google

niverous; but all remarkable for presenting a higher tyye of reptilian organization than any now existing, and approaching in some respects to the birds and in others to the mammalia. Among the vegetable feeders of this group was the *hadrosaurus*, a gigantic animal, 20 feet or more in height, with huge bird-like legs and feet, a lizard-like tail, a diminutive head, and small fore-feet or hands, feeding on plants; while *lælaps* was an equally large carniverous animal of somewhat similar organization."—J. T. P.]

For ages, when the world was young,
I slept upon my lava-bed,
While sandstones formed, and oceans sung
Their solemn anthems o'er my head.

Ages on ages rolled away,
The wrinkled earth itself grew old;
And still upon my bed I lay,
Oppressed by weight and years untold.

The ocean still above me rolled,
The sandstone strata thicker grew;
I lay and groaned beneath the Old,
Crushed and encumbered by the New.

Then in a glad auspicious hour,
Which made my rocky heart rejoice,
I felt a resurrection power—
I heard a resurrection voice.

It said "O mountain, 'wake, arise;
Throw off the sandstone from thy breast;
Roll back the seas, and 'neath the skies
Show the bold frontage of thy crest."

I woke as from a troubled dream;
Threw off the weight by power divine;
Rose to the sun's refulgent beam,
And stellar orbs that round me shine.

The frighted waters sought the sea;
The rifted sandstone opened wide,
And I, aglow with light of day,
Rejoiced, a Mountain in my pride.

Nor I alone: On every hand
Around my peak like mountains stand,
Which heard the voice, and felt the power,
That raised me in my natal hour.

Digitized by Google

South Mountain, Cat Hole, by my side,
Almost as bold and steep as I,
Majestic in their mountain pride,
Point their tall turrets to the sky.

High Rock and Rattlesnake arise;
Newgate and Talcott farther on;
And resting on the northern skies,
Proud peaks of Holyoke and Mt. Tom.

Northeast Mt. Lamentation stands,
Higby and Besec, Middletown,
To Durham ranges stretch their hands,
Where Tremont towereth all their own.

Totoket rises farther down;
And Pistapaug and Saltonstall
Raise to the skies their walls of stone,
Their mural castles gaunt and tall.

Near on my south Mt. Carmel lies,
A giant slumbering in his might;
East Rock and West Rock kiss the skies,
And Whitney Peak delights the sight.

While on my West, in peaks less bold,
The same Plutonian power is seen,
Trappean dikes of lava cold,
And sandstone tilted thrown between.

These lesser heights, whose waving lines
Such beauty to the landscape give,
Tell of the old Triassic times,
And to my tale their witness give.

The voice which called *me* from the deep
These trappean mountains all did hear,
And rose with me from natures sleep,
And stand, as I stand, proudly here.

And now for long telluric years,
I've stood a sentry o'er the land,
And watched with varying hopes and fears,
The changes of Time's mighty hand.

I saw the glacier in his might
Sweep from the north, a frozen sea,

Digitized by Google

Ice piled on ice to mountain height,
  Moving, methought, resistlessly.

I felt his cruel ice-bound teeth
  Plough in my flanks, as on his way
He ground and crushed my rocks beneath:
  I show the furrows to this day.

I've seen the new-formed earth press back
  The waters of the refluent sea,
And wide diffused along its track
  The germs of floras yet to be.

I've seen the living germs far borne
  By wind and wave from other lands,
Grasses and grains, and trees uptorn,
  Find lodgement in the new-made sands.

And as these sands have richer grown,
  And turned to mould from year to year,
From seeds by wind and water sown
  The flowerets and the plants appear.

I saw the primal forests rise,
  And slowly grow from year to year,
Until their branches swept the skies,
  And veiled the landscape far and near.

I saw the beasts and birds appear;
  Beheld their forms and heard their song,
Prowling or flying, without fear
  These mountains and these hills along.

The *mastodon*, the mammal's pride,
  Unchallenged roamed through all these lands,
And birds, immense in height and stride,
  Left their deep foot-prints on the sands.

Huge *dinosaurs* and *hadrosaurs*
  Stalked through this vale with awful form;
Lælaps, with dread carniverous jaws,
  Defied the prehistoric storm.

These on the land; while, in the sea,
  And every stream that marked this vale,
The fishes played in sportive glee,
  And left their impress on the shale.

Digitized by Google

Flora and Fauna of that age:
Your fossils, treasured in my rocks,
The wisdom of the world engage
To find the key these stores unlocks.

I saw the prehistoric race
Roam o'er these vales, and climb these hills;
The mountain caves their dwelling place,
Their drinking place the mountain rills.

Their implements of rudest stone,
Alike of industry or war;
Their needles formed of pointed bone,
Their garments of the wild beast's fur.

For centuries they held these lands,
But left no mounds to mark their day,
Dissolved, like snow, their scattered bands;
They lived, and died, and passed away.

I saw the red man when he came,
And watched him here for many a year;
Leaving behind him but a name,
At last I saw *him* disappear.

I saw the lordly white man come,
And take possession of this vale;
These hills and valleys call his own;
And here begins my modern tale.

I've seen two centuries come and go,
Yea, nearly three, since first was prest
The Indian's harbinger of woe,
The white man's foot, upon my breast.

I've seen the change by centuries wrought
Engraved in Progress' deepest lines;
To us with greater interest fraught
Than those of old Triassic times.

I've seen the wilderness subdued,
Fair villages and towns arise;
Cities with energy imbued,
And art and skill and bold emprise.

Digitized by Google

A hundred such around me rise;
I see them from my mountain height;
Their gilded domes and cloud capped spires
Lend fair enchantment to the sight.

Their business gongs salute my ear,
Their throbbing engines jar my crest;
Their mighty industries appear,
Which meet no check, and know no rest.

Of all the the towns that round me rise,
Of all the cities that I greet,
There's none seems fairer to my eyes
Than that which slumbers at my feet.

Fair city of the Silver Art,
Still slumber in thy quiet vale;
With rocky fastnesses begirt,
May naught against thy peace prevail.

Long will I guard thy schools and homes,
And hold thy precious interests fast,
Watching thy good for years to come,
As I have watched it in the past.

Now, lest my boast I should renew
Of what I've seen and what I've done,
I know my friends, as well as you,
Naught can endure beneath the sun.

If standing in my mountain strength,
I've seen the earth with ruin strewn,
I must confess the truth at length—
I stand a witness of my own.

My peak fast crumbling year by year.
The debris gathering round my feet,
Proclaim in accents loud and clear.
The doom which men and mountains meet.

This doom keeps sounding in my ears,
And rolls along this mountain range,
Nothing remains unchanging here—
But change itself, all else is change.

Digitized by Google

Ye who oft climb my summit fair,
And clamber o'er my fallen stones,
Yourselves for every change prepare—
Ye climb my summit o'er my bones.

Mountains and mortals must decay;
Crumble alike like grains of sand,
And when all else has passed away,
The Mount of Truth alone will stand.

[For the *geology* of West Peak see Prof. James D. Dana's "Excursion to the Hanging Hills of Meriden," as given in Davis' History of Meriden, pp. 53–66.]

[For fossils of Connecticut Valley, see Art. Fossil Foot-prints in Appleton's Am. Encyclopedia.]

Digitized by Google

Digitized by Google

Digitized by Google

Digitized by Google

Digitized by Google

Digitized by Google

Digitized by Google